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## REMARKS

Claims 1-53 are all of the claims presently pending in the application.

Applicant gratefully acknowledges the Examiner's indication that claims 16-24, 27, 28, 30, 33-36, 38, and 40-50 would be <u>allowable</u> if rewritten in proper independent format. However, Applicants believe that the present invention defined all claims, when properly understood, is clearly patentable over the prior art of record.

It is noted that Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 1-15 stand newly rejected under 35 USC §101 as allegedly directed toward non-statutory subject matter.

Claims 1, 2, 5, 7, 8, 13, 15, 25, 26, 29, 31, 32, 37, 39, and 51-53 stand rejected under 35 USC §103(a) as unpatentable over US Patent Publication No. 2002/0122504 to Payne et al., further in view of US Patent Publication No. 2001/0010709 to Iwamatsu et al.

The prior art rejection is respectfully traversed in view of the following discussion.


## I.    THE CLAIMED INVENTION

Applicant's invention, as disclosed and claimed in independent claim 1, is directed to a method for estimating a threshold value in deciding data along an amplitude by a terminal performing wireless communication with a wireless station in accordance with multi-level QAM (quadrature amplitude modulation). It is presupposed which one of multiple levels can be a level of a received data signal, and a plurality of threshold values assumed (referred to herein as 'assumed threshold values') in association with the presupposition is set up. The assumed threshold values based on the received data is updated sequentially, and an ultimate threshold value is selected from the plural assumed threshold values.

In a conventional method described in paragraph [0011] on page 7 of the specification there is no amplitude information transmitted from the base station to the terminal (UE). Thus, the terminal side has to estimate the threshold value.

In contrast, the present invention provides a method by which, when no definite amplitude information is supplied from a transmission side in an n-ary (multi-level) QAM system, the threshold can be estimated to achieve amplitude synchronization to demodulate

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the data.

## II.    THE NON-STATUTORY SUBJECT MATTER REJECTION

In the latest Office Action, the Examiner newly rejects claims 1-15 under 37 CFR §101 as allegedly directed to non-statutory subject matter under the recent guidelines from the *Bilski* holding.

In response, Applicant brings to the Examiner's attention that the original claim language clearly satisfies the requirement even of the recent *Bilski* holding, since the claim is clearly directed to a method executed "… by a terminal performing wireless communication with a wireless station …." Thus, even the original claim cannot reasonably be considered as failing the standard newly-announced by *Bilski*, since the claim clearly refers to a specific apparatus.

However, in an effort to expedite prosecution, Applicant has added wording to further comply with the new standard announced by *Bilski*.

In view of the above, the Examiner is respectfully requested to reconsider and withdraw this rejection.

## III.    THE PRIOR ART REJECTION

The Examiner alleges that Payne, when modified by Iwamatsu, renders obvious the present invention defined by claims 1, 2, 5, 7, 8, 13, 15, 25, 26, 29, 31, 37, 39, and 51-53. Applicant again respectfully disagrees.

In Applicant's previous response, it was brought to the Examiner's attention that both primary reference Payne and secondary reference Iwamatsu related to compensation for inter symbol interference and did not address the problem of setting up initial threshold values.

As Applicant pointed out previously, primary reference Payne already establishes a threshold level, using an entirely different mechanism. That is, as clearly explained in [paragraph 0021], Payne's method for determining a threshold level is as follows:

"*Thus the values of the two bits preceding the current bit Bn determine the present threshold level.*"

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Therefore, contrary to the approach in the rejection currently of record, the Examiner's initial burden for an obviousness evaluation of the claimed invention is to recognize that Payne already has a threshold determination mechanism that clearly differs from that of the claimed invention and to articulate a reasonable rationale to modify Payne's method to conform to the claimed invention.

Stated slightly differently, Applicant submits that any aspects of the mechanism used in either Payne and/or Iwamatsu for the mechanism of distortion compensation are actually irrelevant to the present evaluation of a mechanism directed to an entirely different processing, unless the Examiner can demonstrate that the mechanism used for the different purpose of distortion compensation in Iwamatsu was known in the art as either a substitution of or as providing an improvement for the threshold level determination method recited above from paragraph [0021] of primary reference Payne, and that the revised threshold level determination would then satisfy the plain meaning of the language of the claimed invention. Neither Payne nor Iwamatsu is concerned with a mechanism for "estimating a threshold value", as required by the independent claims.

The Examiner's evaluation currently of record clearly overlooks that, as explained on page 1 of the present specification (and even set up in the description in the preamble of independent claim 1, the present invention is directed to the problem that HSPDA in 3GPP has no synchronization signal along the amplitude QAM, thereby raising a requirement that mobile stations estimate a threshold value to achieve amplitude synchronization without resorting to a preset signal (*i.e.*, lines 19-21 of page 1). Neither Payne nor Iwamatsu is directed to this problem and neither reference, therefore, can reasonably be deemed as demonstrating a substitution or improvement over the threshold level determination described in paragraph [0021] of primary reference Payne as required to satisfy the plain meaning of the claim language.

In the response on page 2 of the Office Action mailed on January 6, 2009, the Examiner attempts to justify the rejection currently of record. The Examiner indicates in the rebuttal discussion in paragraph 1 that Payne does indeed have a mechanism related to threshold levels that would seem to satisfy the claimed invention.

In response, Applicant respectfully submits that the fundamental flaw in the

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Examiner's position is that mechanism in Payne upon which the Examiner relies is actually oriented toward the purpose of compensating a threshold that has already been determined using another mechanism unrelated to the claimed mechanism (e.g., see paragraph [0021]). Thus, the mechanism in Payne is not directed to estimating a threshold value, as required by the claim, using the claimed mechanism of presupposing a value and then selecting an ultimate value to use as the threshold. The process in Payne upon which the Examiner is, at best, a compensation mechanism for the threshold that is already determined. There is no suggestion in Payne to use this compensation mechanism as a mechanism to estimate a threshold, one of which will be ultimately selected.

Finally, it is noted that the rejection currently of record fails to provide a rationale why one having ordinary skill in the art would even want to modify the threshold determination method that is expressly described in paragraph [0021] of primary reference Payne in accordance with the mechanism described in the claims. The simple mechanism of using two previous bits (e.g., paragrph [0021]) to determine the present threshold level is clearly not a substitute for the mechanism described in the independent claim, and the simple mechanism of Payne will certainly not be improved by substituting the mechanism described by the independent claim.

Hence, turning to the clear language of the claims, in Payne, even if modified by secondary reference Iwamatsu, there is no teaching or suggestion of: "A method for estimating a threshold value in deciding data along an amplitude by a terminal performing wireless communication with a wireless station in accordance with multi-level QAM (quadrature amplitude modulation), said method comprising executing a sequence of instructions in said terminal for: presupposing in which one of multiple levels can be a level of a received data signal and setting up a plurality of threshold values assumed (referred to herein as 'assumed threshold values') in association with said presupposition; updating sequentially the assumed threshold values based on received data; and selecting an ultimate threshold value from said plural assumed threshold values", as required by independent claim 1, and the remaining independent claims have at least similar language.

Therefore, the Examiner is respectfully requested to reconsider and withdraw the rejection currently of record based upon primary reference Payne.

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## IV.   FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-53, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance.   The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: 03/19/09

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